Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

members were constant for the same media or temperatures. He shows that characters of the conidia are not sufficiently constant for the differentiation of species; the form and dimensions of the ascospores, however, are useful as diagnostic characters of species. Four species confused by authors as *Aspergillus glaucus* are described and figured; two of these are new. A variety *violaceum* is added under *Eurotium herbariorum*, and characters are given to separate these forms from two other members of the same group, *A. Oryzae* and *A. flavus*.—H. HASSELBRING.

Fossil Osmundaceae.[17]—In this final contribution on the fossil Osmundaceae, the authors bring to a conclusion their investigations and summarize their results for the whole series. The present memoir deals with a new stem, *Osmundites Kolbei*, from the Jurasso-Cretaceous (Wealden) of Herbertsdale, Cape Colony. The softer tissues are stated to be almost entirely destroyed before fossilization, so that only the fibrovascular and scelerenchymatous systems are left. The stem is much flattened and generally in a condition of extreme collapse. The authors state that the fibrovascular ring is so much flattened that the opposite sides are sometimes in contact with each other. They omit to state, a matter of the utmost importance in connection with their conclusions, clearly shown by their fig. 1, that the condition of maceration is so extreme that the central cylinder has not only collapsed but has been burst open and distributed throughout the cross-section of the stem. It is not surprising, in view of the extreme decay and displacement presented by their material, that they find tracheids and masses of tracheids scattered in the central substance lying in the midst of the displaced fibrovascular strands. The authors express the conviction "that there is no doubt that the tracheal elements are true and real constituents of the central tissue." It is unfortunate that they have not demonstrated the accuracy of their interpretation by figures of transverse sections on a sufficient scale of magnitude of the stelar tissues. An unprejudiced anatomist would scarcely admit the accuracy of their statements on the evidence they submit. From this highly disintegrated stem it is not surprising, in view of their previous statements, that they draw the conclusion that the central tissue of the osmundaceous stele was originally composed of tracheids, and that hence the pith in this family is a derivative of the fibrovascular tissues. The authors make the discovery, anticipated by Mr. SINNOTT in the case of the living Osmundaceae, that foliar gaps apparently absent in *Osmundites Kolbei* are in reality present. Finally, they draw up a table of the osmundaceous forms investigated by them, which shows clearly that the protostelic representatives are of more ancient origin, so far as the available geological record goes, than whose with a developed pith. Their reasoning in regard to the medullate forms is not so conclusive, since they mention three species, *O. Gibbiana*, *O. Kolbei*, and *O. skidegatensis*, from not very different geological levels, Lower Cretaceous and Upper Jurassic, as proving their hypothesis that the pith of the Osmundaceae is of stelar origin and that the medullate forms are an ascending series, beginning with species which have a pith but no foliar gaps separating the collateral bundles, and ending with those in which the bundles are concentric and separated by widely patent gaps. So far as the testimony goes, which they have brought forward in their various memoirs, this hypothesis appears to bear a surprising resemblance to a confession of faith, since it is essentially the substance of things not seen but hoped for.—E. C. JEFFREY.

---

[17] KIDSTON, R., and GWYNNE-VAUGHAN, D. T., Fossil Osmundaceae. IV. Trans. Roy. Soc. Edinburgh 47^3:no. 17. 1910.

Parasites and xeno-parasites.—The extensive investigations of CANNON[18] upon the root habits of desert plants has added *Orthocarpus purpurascens* and two species of *Krameria* to the list of semiparasitic plants. *Orthocarpus*,[19] the first to be reported, is an annual of small size, united by its roots to a considerable variety of hosts, of which most are also annual in habit. *Krameria canescens* and *K. parvifolia*, two shrubby desert plants, were formerly taken to be autophytic, and the present study seems to show that they have not advanced far in parasitism. The seeds germinate readily irrespective of the presence or absence of the host plants, and the seedlings are capable of independent existence for an indefinite period, and yet when associated with possible hosts the root tips of *Krameria* organize haustoria penetrating the roots of the host and forming therewith close vascular connections. *Krameria parvifolia* has been found on *Parkinsonia microphylla* only, but *K. canescens* has a variety of hosts, being most frequently associated with *Covillea tridentata*. These parasites show but few of the atrophies or alterations usually accompanying dependent nutrition.

In making a study of the conditions which may have led to the development of parasitism, MACDOUGAL[19, 20] has succeeded in uniting various plants, so that the one lived parasitically upon the other for more than two entire seasons. Various species of cactus were usually chosen as hosts, *Echinocactus* and the giant *Cereus* figuring most conspicuously in this rôle, while the "xeno-parasites" included the Mexican grape, agave, various cacti, and other succulent plants. After the union of the host and parasite was effected, there appeared in the development of the latter the atrophies and reductions characteristic of parasites. It appears that the relative acidity of the sap of the two plants has no part in determining their potentialities as parasite and host, but for the one to draw its nutrition from the other the latter must possess sap of a lower osmotic activity than the former, although not all plants thus related

---

[18] MACDOUGAL, D. T., and CANNON, W. A., The conditions of parasitism in plants. Publication no. 129, Carnegie Institution of Washington. 1910.

[19] CANNON, W. A., Parasitism of *Orthocarpus purpurascens*. Plant World **12**: 259–261. 1909.

[20] MACDOUGAL, D. T., The making of parasites. Plant World **13**: 207–214. 1910.